AMENDMENTS TO THE CLAIMS

1. (Original) A system for providing communications with a plurality of subscriber units comprising:

beam forming circuitry;

direction finding circuitry; and

control circuitry, wherein said control circuitry operates with said direction finding circuitry to determine a combination of subscriber units of said plurality of subscriber units for providing substantially isolated communication links, and wherein said control circuitry operates with said beam forming circuitry to implement an interference diversity gain scheme for use in conducting communications through said substantially isolated communication links.

2. (Original) The system of claim 1, wherein said control circuitry operates to determine a data rate for providing desired communication quality with subscriber units of said combination of subscriber units achievable when said interference diversity gain scheme is implemented.

3. (Original) The system of claim 1, wherein operation of said control circuitry with said direction finding circuitry determines angular separation of subscriber units of said plurality of subscriber units.

4. (Original) The system of claim 3, wherein said combination of subscriber units comprises a combination of subscriber units in which each subscriber unit of the combination has a minimum angular separation with respect to other subscriber units of the combination.

5. (Original) The system of claim 1, wherein operation of said control circuitry with said direction finding circuitry determines a pilot C/I of subscriber units of said plurality of subscriber units.

6. (Original) The system of claim 5, wherein said combination of subscriber units comprises a combination of subscriber units which as a combination have a greatest sum of pilot C/I as compared to other combinations of subscriber units of said plurality of subscriber units.

7. (Original) The system of claim 1, wherein said interference diversity gain scheme is implemented to alter a communication attribute at a rate higher than a base station interleaving frame rate.

8. (Original) The system of claim 7, wherein said rate is several times the base station interleaving frame rate.

9. (Original) The system of claim 1, wherein said interference diversity gain scheme is implemented to alter a communication attribute at a rate lower than a base station interleaving frame rate.

10. (Original) The system of claim 9, wherein said rate is on the order of tenths of the interleaving frame rate.

11. (Original) The system of claim 1, wherein said implementing an interference diversity gain scheme comprises a communication attribute hopping scheme to periodically alter an attribute of said communication links.

12. (Original) The system of claim 11, wherein the communication attribute hopping scheme comprises a pseudo random hopping scheme.

13. (Original) The system of claim 11, wherein the communication attribute hopping scheme comprises a deterministic hopping scheme.

14. (Original) The system of claim 11, wherein a communication attribute altered by the communication attribute hopping scheme comprises a time slot.

15. (Original) The system of claim 11, wherein a communication attribute altered by the communication attribute hopping scheme comprises a carrier frequency.

16. (Original) The system of claim 11, wherein a communication attribute altered by the communication attribute hopping scheme comprises an antenna beam spatial characteristic.

17. (Original) The system of claim 11, wherein the communication attribute hopping scheme alters a plurality of communication attributes.

18. (Original) The system of claim 17, wherein said plurality of communication attributes comprises a time slot and a carrier frequency.

19. (Original) The system of claim 1, wherein said beam forming circuitry comprises adaptive beam forming circuitry.

20. (Original) The system of claim 1, wherein said beam forming circuitry comprises fixed beam forming circuitry.

21. (Original) A method for providing communication comprising:

implementing an interference diversity gain scheme for conducting communications between a plurality of subscriber units and a base station;

determining a combination of subscriber units of said plurality of subscriber units for providing simultaneous substantially isolated communication links between subscriber units of said combination of subscriber units and said base station;

determining a data rate for providing desired communication quality with subscriber units of said combination of subscriber units achievable when said interference diversity gain scheme is implemented; and

providing said simultaneous substantially isolated communication links between subscriber units of said combination of subscriber units and said base station and providing therein data communication at an associated one of said determined data rates.

22. (Original) The method of claim 21, wherein said determining a combination of subscriber units comprises:

determining a combination of subscriber units in which each subscriber unit of the combination has a minimum angular separation with respect to other subscriber units of the combination.

23. (Original) The method of claim 21, wherein said determining a combination of subscriber units comprises:

determining a combination of subscriber units which as a combination have a greatest sum of pilot C/I as compared to other combinations of subscriber units of said plurality of subscriber units.

24. (Original) The method of claim 21, wherein said interference diversity gain scheme is implemented to alter a communication attribute at a rate higher than a base station interleaving frame rate.

25. (Original) The method of claim 24, wherein said rate is several times the base station interleaving frame rate.

26. (Original) The method of claim 21, wherein said interference diversity gain scheme is implemented to alter a communication attribute at a rate lower than a base station interleaving frame rate.

27. (Original) The method of claim 26, wherein said rate is on the order of tenths of the interleaving frame rate.

28. (Original) The method of claim 21, wherein said implementing an interference diversity gain scheme comprises:

establishing a communication attribute hopping scheme to periodically alter an attribute of said communication links.

29. (Original) The method of claim 28, wherein the communication attribute hopping scheme comprises a pseudo random hopping scheme.

30. (Original) The method of claim 28, wherein the communication attribute hopping scheme comprises a deterministic hopping scheme.

31. (Original) The method of claim 28, wherein a communication attribute altered by the communication attribute hopping scheme comprises a time slot.

32. (Original) The method of claim 28, wherein a communication attribute altered by the communication attribute hopping scheme comprises a carrier frequency.

33. (Original) The method of claim 28, wherein a communication attribute altered by the communication attribute hopping scheme comprises an antenna beam spatial characteristic.

34. (Original) The method of claim 28, wherein the communication attribute hopping scheme alters a plurality of communication attributes.

35. (Original) The method of claim 34, wherein said plurality of communication attributes comprises a time slot and a carrier frequency.

36. (Original) The method of claim 21, wherein said communication links are provided using a multiple beam antenna array.

37. (Original) The method of claim 36, wherein said multiple beam antenna array is coupled to adaptive beam forming circuitry.

38. (Original) The method of claim 36, wherein said multiple beam antenna array is coupled to fixed beam forming circuitry.

39. (Original) A method for providing increased wireless communication capacity comprising:

establishing a communication attribute hopping scheme to alter, over time, an attribute of a communication link associated with each active subscriber unit of a plurality of subscriber units in communication with a base station;

determining a combination of subscriber units of said plurality of subscriber units in which each subscriber unit of the combination has a minimum angular separation with respect to other subscriber units of the combination for providing substantially isolated communication links between subscriber units of said combination of subscriber units and said base station;

determining a data rate achievable when said communication attribute hopping scheme is implemented for providing desired communication quality with subscriber units of said combination of subscriber units;

providing said substantially isolated communication links between subscriber units of said combination of subscriber units and said base station and providing therein data communication at an associated one of said determined data rates; and

applying said communication attribute hopping scheme to said substantially isolated communication links.

40. (Original) The method of claim 39, wherein the communication attribute hopping scheme comprises a pseudo random hopping scheme.

41. (Original) The method of claim 39, wherein the communication attribute hopping scheme comprises a deterministic hopping scheme.

42. (Original) The method of claim 39, wherein a communication attribute altered by the communication attribute hopping scheme comprises a time slot.

43. (Original) The method of claim 39, wherein a communication attribute altered by the communication attribute hopping scheme comprises a carrier frequency.

44. (Original) The method of claim 39, wherein a communication attribute altered by the communication attribute hopping scheme comprises an antenna beam spatial characteristic.

45. (Original) The method of claim 39, wherein the communication attribute hopping scheme alters a plurality of communication attributes.

46. (Original) The method of claim 45, wherein said plurality of communication attributes comprises a time slot and a carrier frequency.

47. (Original) The method of claim 39, wherein said determining a combination of subscriber units comprises:

determining all combinations of subscriber units having at least a threshold angular separation and selecting a best combination of subscriber units therefrom.

48. (Original) The method of claim 47, wherein said determining a combination of subscriber units further comprises:

selecting said best combination of subscriber units at least in part as a combination having a greatest sum of pilot C/I.

49. (Original) The method of claim 39, wherein said communication links are provided using a multiple beam antenna array.

50. (Original) The method of claim 49, wherein said multiple beam antenna array is coupled to adaptive beam forming circuitry.

51. (Original) The method of claim 49, wherein said multiple beam antenna array is coupled to fixed beam forming circuitry.

52. (Original) The method of claim 39, wherein said substantially isolated communication links between subscriber units of said combination of subscriber units and said base station are provided simultaneously.

53. (Currently amended) A method for mobile data communication comprising:

transmitting from a base station to mobile stations in a time division access scheme using multiple beams; and

switching, over time, a forward link time slot assignment of said time division access scheme of each of a plurality of subscriber units, ~~wherein~~ said switching a forward link time slot assignment comprising[[:]] transmitting to said plurality of subscriber units each within a different time slot of said time division access scheme[[;]] and varying from transmission frame to transmission frame in a pseudo random sequence the time slot within which transmission is made to said subscribers.

54. (Cancelled)

55. (Original) The method of claim 53, further comprising

varying the carrier frequency from transmission frame to transmission frame.

56. (Original) The method of claim 53, wherein the forward link time slot assignment is switched at a rate several times an interleaving frame rate.

57. (Previously Presented) The method of claim 56, wherein a forward link data rate for each subscriber unit is determined from a pilot signal-to-interference ratio, an antenna array gain, and an interference diversity gain estimated from statistics of an interference environment.

58. (Original) The method of claim 56 wherein one or more simultaneous forward link beams are formed to maximize throughput for a fixed transmit power.

59. (Previously Presented) The method of claim 53, wherein the forward link time slot assignment is switched at a rate less than an interleaving frame rate.

60. (Previously Presented) The method of claim 59, wherein a forward link data rate is determined for each subscriber unit by monitoring signal quality of a traffic signal-to-interference ratio.

61. (Previously Presented) The method of claim 59, wherein a number of simultaneous forward link beams is maximized at each switching interval to maximize throughput for a fixed transmit power.